



NZ/QC/YPD/T&F-W4/2018-19/P3-BB5

Date: 11-06-2018

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade used in Bituminous Concrete.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4.Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1 ;

SL No	Details	Test Results	Requirements as per I.S 73 -1992 Specifications
1.	Penetration at 25 ⁰ C	50.10 ⁰ C	Min. 45
2.	Ductility Value at 25 ⁰ C	10 4cm	40
3.	Flash point	238 ⁰ C	Minimum 220 ⁰ C
4.	Softening point	51.90 ⁰ C	Min. 47

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NZ/QC/YPD/T&F-W4/2018-19/P3-CB5

Date: 11-06-2018

1. TEST REPORT ON COARSE AGGREGATE:

Sub: Testing of Coarse Aggregate used in Bituminous Concrete.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4.Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TABLE 1.1 ;

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)- 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	23.58 %	Not more than 24.00 %
2.	Combined Flakiness and Elongation index, %	25.14 %	Not more than 35.0 %
3.	Water absorption, %	0.37 %	Not more than 2.0 %
4.	Specific gravity	2.61	-----
5.	Soundness	6.49 %	Max. 12 % in Sodium Sulphate

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NZ/QC/YPD/T&F-W4/2018-19/P3-BC21

Date: 14-06-2018

1. TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4.Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

A. Type of Construction : Bituminous Concrete

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = 5.44 %

2. Gradation Test

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specifications- 2013 BC (Grading - 2)
19.0	100	100
13.2	97.35	90-100
9.5	83.05	70-88
4.75	68.25	53-71
2.36	55.60	42-58
1.18	47.10	34-48
0.600	35.80	26-38
0.300	23.65	18-28
0.150	19.30	12-20
0.075	9.25	4-10

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NZ/QC/YPD/T&F-W4/2018-19/P3-BS21

Date: 15-06-2018

1. TEST REPORT ON BITUMINOUS MIXES : (STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4.Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04. }

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	1379	900
2	Marshall Flow at 60°C, mm.	3.52	2.0 - 4.0

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NZ/QC/YPD/T&F-W4/2018-19/P3-BC22

Date: 15-06-2018

1. TEST REPORT ON BITUMINOUS MIXES :**(BITUMEN EXTRACTION TEST & GRADATION TEST)**

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4.Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS**A. Type of Construction : Bituminous Concrete**1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.42 %****2. Gradation Test****TABLE 1.1**

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specifications- 2013 BC (Grading - 2)
19.0	100	100
13.2	98.05	90-100
9.5	85.75	70-88
4.75	69.30	53-71
2.36	53.90	42-58
1.18	45.20	34-48
0.600	37.60	26-38
0.300	25.85	18-28
0.150	16.45	12-20
0.075	9.10	4-10

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NZ/QC/YPD/T&F-W4/2018-19/P3-BS22

Date: 16-06-2018

**1. TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)****Sub:** To determine the stability of bituminous mix for BC mix sample.**{Project*:** **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4.Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}**Ref.:** Material testing/PMC/17-18,Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS**Table 1: Properties of BC (Gr-2) Mix**

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	1317	900
2	Marshall Flow at 60°C, mm.	3.54	2.0 - 4.0

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NZ/QC/YPD/T&F-W4/2018-19/P3-BC23

Date: 15-06-2018

1. TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4.Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

A. Type of Construction : Bituminous Concrete

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = 5.41 %

2. Gradation Test

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specifications- 2013 BC (Grading - 2)
19.0	100	100
13.2	97.30	90-100
9.5	85.20	70-88
4.75	68.35	53-71
2.36	56.25	42-58
1.18	43.05	34-48
0.600	34.90	26-38
0.300	26.20	18-28
0.150	18.35	12-20
0.075	7.05	4-10

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NZ/QC/YPD/T&F-W4/2018-19/P3-BS23

Date: 16-06-2018

1. TEST REPORT ON BITUMINOUS MIXES : (STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4.Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	1354	900
2	Marshall Flow at 60°C, mm.	3.58	2.0 - 4.0

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NZ/QC/YPD/T&F-W4/2018-19/P3-K1

Date: 11-06-2016

TEST REPORT

Sub: Testing of Pre-cast Material-Kerb Stones.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4.Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

1. PHYSICAL TESTS ON KERB STONES :

Sl No.	Identification	Flexural strength, fcr in N/sqmm	Characteristic Compressive Strength, fck in N/sqmm	Avg. Characteristic. Compressive Strength fck in N/sqmm	Remarks
1	001	3.34	22.85	22.30	As per Cl. 6.2.2 of IS 456- 2000, $f_{cr}=0.7\sqrt{f_{ck}}$
2	002	3.24	21.45		
3	003	3.32	22.60		

2. WATER ABSORPTION TEST

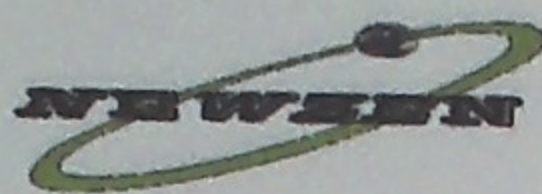
Sl No	Identification	Water absorption %	Average value %
1	001	4.36	4.45
2	002	4.48	
3	003	4.51	

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For Newzen Consultants Bangalore

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NZ/QC/YPD/T&F-W4/2018-19/P3-K2

Date: 15-06-2016

TEST REPORT

Sub: Testing of Pre-cast Material-Kerb Stones.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4.Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

1. PHYSICAL TESTS ON KERB STONES :

Sl No.	Identification	Flexural strength, fcr in N/sqmm	Characteristic Compressive Strength, fck in N/sqmm	Avg. Characteristic Compressive Strength fck in N/sqmm	Remarks
1	001	3.33	22.70	22.35	As per Cl. 6.2.2 of IS 456-2000, fcr=0.7√ fck
2	002	3.31	21.45		
3	003	3.34	22.90		

2. WATER ABSORPTION TEST

Sl No	Identification	Water absorption %	Average value %
1	001	4.45	4.41
2	002	4.38	
3	003	4.42	

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NZ/QC/YPD/T&F-W4/2018-19/P3-K3

Date: 20-06-2016

TEST REPORT

Sub: Testing of Pre-cast Material-Kerb Stones.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4.Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

1. PHYSICAL TESTS ON KERB STONES :

Sl No.	Identification	Flexural strength, fcr in N/sqmm	Characteristic Compressive Strength, fck in N/sqmm	Avg. Characteristic. Compressive Strength fck in N/sqmm	Remarks
1	001	3.34	22.80	22.25	As per Cl. 6.2.2 of IS 456- 2000, $f_{cr}=0.7\sqrt{f_{ck}}$
2	002	3.23	21.30		
3	003	3.32	22.65		

2. WATER ABSORPTION TEST

Sl No	Identification	Water absorption %	Average value %
1	001	4.30	4.39
2	002	4.45	
3	003	4.42	

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For Newzen Consultants Bangalore



NZ/QC/YPD/T&F-W4/2018-19/P3-K4

Date: 25-06-2016

TEST REPORT

Sub: Testing of Pre-cast Material-Kerb Stones.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4.Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

1. PHYSICAL TESTS ON KERB STONES :

Sl No.	Identification	Flexural strength, fcr in N/sqmm	Characteristic Compressive Strength, fck in N/sqmm	Avg. Characteristic. Compressive Strength fck in N/sqmm	Remarks
1	001	3.33	22.65	22.31	As per Cl. 6.2.2 of IS 456- 2000, $fcr=0.7\sqrt{fck}$
2	002	3.24	21.50		
3	003	3.34	22.80		

2. WATER ABSORPTION TEST

Sl No	Identification	Water absorption %	Average value %
1	001	4.37	4.38
2	002	4.44	
3	003	4.35	

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NZ/QC/YPD/T&F-W4/2018-19/P3-K5

Date: 27-06-2016

TEST REPORT

Sub: Testing of Pre-cast Material-Kerb Stones.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4.Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

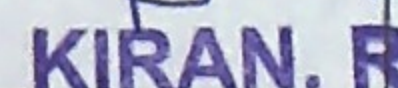
Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

1. PHYSICAL TESTS ON KERB STONES :

Sl No.	Identification	Flexural strength, fcr in N/sqmm	Characteristic Compressive Strength, fck in N/sqmm	Avg. Characteristic. Compressive Strength fck in N/sqmm	Remarks
1	001	3.34	22.80	22.26	As per Cl. 6.2.2 of IS 456- 2000, fcr=0.7√ fck
2	002	3.31	21.60		
3	003	3.32	22.40		

2. WATER ABSORPTION TEST

Sl No	Identification	Water absorption %	Average value %
1	001	4.33	4.41
2	002	4.48	
3	003	4.43	



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